

We Claim:

1 4. An optical fiber formed by a method which comprises:

(a) providing a preform having a glass core, a substantially homogeneous coating of a light interactive material over said glass core and a glass cladding over said coating of said light interactive material, with said glasses having an overlapping flow range and said coating material having a flow point which lies below the flow range of said glasses with said flow range being in the range of about 600-1500°C; and

(b) heating said preform to an elevated temperature and drawing a fiber from said preform at the flow temperature of said glasses, whereby a fiber is formed having a substantially continuous film of light interactive material formed between said core and cladding throughout the entire length of the fiber, whereby said coating material strongly interacts with light in the core to effect either high dispersion, absorption saturation, amplification, Faraday rotation or other similar effects of the said light.

2. An optical fiber formed by a method which comprises:

(a) providing a preform having a glass core, a substantially homogeneous coating of a light interactive material over said glass core and a glass cladding over said coating of said light interactive material, where said light interactive material is an inorganic material selected from the group consisting of a metal, metal alloy, ferrite, ceramic, magnetic material and a semiconductor, with said glasses having an overlapping flow range and said coating material having a flow point which lies below the flow range of said glasses with said flow range being in the range of about 600-1500°C; and

(b) heating said preform to an elevated temperature and drawing a fiber from said preform at the flow temperature of said glasses, whereby a fiber is formed having a substantially continuous film of light interactive material formed between said core and cladding throughout the entire length of the fiber, whereby said coating material strongly interacts with light in the core to effect either high

- 15 dispersion, absorption saturation, amplification, Faraday rotation or other similar
16 effects of the said light.

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